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This article focuses on the measurement of the overall importance of brands for consumer decision making—that is, brand relevance in category, or BRiC—across multiple categories and countries. Although brand equity measures for specific brands have attracted a large body of literature, the questions of how important brands are within an entire product category and the extent to which BRiC differs across categories and countries have been neglected. The authors introduce the concept of BRiC (a category-level measure, not a brand-level measure). They develop a conceptual framework to measure BRiC and the drivers of BRiC, test the framework empirically with a sample of more than 5700 consumers, and show how the construct varies across 20 product categories and five countries (France, Japan, Spain, the United Kingdom, and the United States). The results suggest a high validity of the proposed BRiC measure and show substantial differences between categories and countries. A replication study two-and-a-half years later confirms the psychometric properties of the suggested scale and shows remarkable stability of the findings. The findings have important implications for the management of brand investments.

*Keywords:* brand relevance, brand functions, brand equity, scale development, cross-national research

## How Important Are Brands? A Cross-Category, Cross-Country Study

Brands are of enormous economic importance to companies. The strength of brands such as Starbucks or Nokia enables them to charge a significant price premium. Buyers of a Mercedes-Benz car tend to be especially brand loyal, promising future sales to the company. As a result, brand power is reflected in higher firm valuation (e.g., Simon and Sullivan 1993). Therefore, it is not surprising that top managers put brand-building activities at the top of their priority list of management challenges. The extant literature on brand management (e.g., Aaker 1996; Keller 2008) provides managers with useful support regarding how to build and

grow a brand. Brand building requires considerable investments in communication, distribution, and other activities. However, a question that needs to be answered before any investment decision is one of relevance. That is, how relevant are brand-building activities for a company's success compared with other investment alternatives? Implicit to the idea of brand management is the assumption that brand management is highly relevant, if not of the utmost importance, to top management. Although this is true for many firms, it does not apply to all of them. Thus, managers are well advised to carefully analyze the economic potential of brand investments in their business.

The conditions for successful brand building are not equally favorable across categories. Success depends on several factors, such as customers' predispositions toward brands, own management capabilities, and competitors' activities. Customers' predispositions toward brands are particularly important because, as a prerequisite, brands need to be relevant to the customer to hold any economic relevance for the firm. Specifically, when customers believe that brands are important for their buying decision, they do

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so because brands provide important functions along the purchase decision and consumption process.

Information economics theory (e.g., Nelson 1970) posits that customers' ability to assess product quality in advance differs greatly across categories. For example, customers can easily inspect the quality of food before purchase, but they need to trust their supplier in many service businesses (e.g., airlines, investment broker). Brands may serve as an important signal to reduce perceived risk, which explains the formation of brand equity from an information economics perspective (e.g., Erdem and Swait 1998). Given that the level of perceived risk differs across categories, the conditions for building brand equity are also likely to be different.

The importance of brands may also vary across countries. Research on cultural values (Hofstede 2003) suggests that country populations differ in their value systems. For example, American society is known for emphasizing individualism more than German society. Because brands may help consumers communicate their self and differentiate themselves from other people, brands might play a larger role for consumer decisions in the United States than in Germany.

For marketing managers, it is important to understand the role of brands in the customer decision process. In many markets, the importance of brands in general and the role of brand functions in particular are not as clear as for cars or luxury goods. For example, how important is the brand when a customer chooses a mobile network operator? Provided the brand is important, is importance mainly driven by uncertainty about the quality of service provision or by expected social benefits? What about other categories, such as insurance or analgesics?

In this article, we introduce a construct called "brand relevance in category" (BRiC), which measures the overall role of brands in customers' decision making in a specific category. Under the assumption that the brand name provides an additional benefit to the customer (e.g., the reduction of perceived risk), BRiC can be thought of as a general decision weight that puts expected brand benefits in relation to other benefits, such as the benefit derived from a lower price. We emphasize that the proposed BRiC metric is defined at the category level. Thus, it does not vary across brands but only across categories. Unlike a brand-level measure, BRiC can be measured before an existing or new brand has been introduced into a new market. Thus, it can be used as a prelaunch diagnostic.

This article makes several contributions to the branding literature. First, we introduce the concept of BRiC. Second, we develop and test new scales to measure BRiC and the functions of brands. We apply the scales to 20 product categories covering fast-moving consumer goods (FMCG), durables, services, and retailers involving 5769 consumers from five countries. The results offer substantive insights into the differences of BRiC across countries, categories, and consumers. Third, we study several consumer-specific and category-specific characteristics to explain the observed differences. Fourth, we demonstrate the stability of BRiC over time and confirm the psychometric properties of the scale in a replication study two-and-a-half years later.

We organize the remainder of this article as follows: In the next section, we motivate the managerial relevance of the concept with insights from an explorative survey among practitioners. We then present the conceptual framework.

We continue with the development and validation of the BRiC scale. Then, we investigate the differences in BRiC across countries, categories, consumers, and time. We conclude with a discussion of the theoretical and managerial implications and limitations of the study.

### *HOW MANAGERS THINK ABOUT BRiC: AN EXPLORATIVE STUDY*

The BRiC construct offers a simple message: It explains how sensitive customers react to differences in brands. Similar to price sensitivity, brand managers should intuitively understand the value of this information because it affects their brand investment decisions. However, do managers really perceive BRiC as relevant compared with other criteria, such as profit margin or sales growth potential?

To answer these questions, we conducted an explorative online study among members of an international top management consulting firm in December 2008. Note that this study is not meant to be representative, nor should its results be interpreted in a normative way. However, respondents represent the typical decision maker who is involved with strategic brand investment decisions. We contacted 38 experienced managers in the cooperating firm's offices in London, Madrid, New York, Paris, and Tokyo. Of these, 11 responded (for a 29% effective response rate)—3 from France and 2 from each of the other four countries. Respondents have an average of 12.9 (SD = 6.75) years of work experience across different industries (M = 3.18, SD = 2.04) and indicated that they are marketing experts (M = 5.00, SD = 2.24; seven-point scale). Importantly, 82% reported that they had previously been involved in brand investment decisions. We provide questionnaire details in Web Appendix A (<http://www.marketingpower.com/jmroct10>).

We confronted managers with a typical allocation decision of brand investment in the face of a limited budget. We then asked for the importance of BRiC as a potential decision criterion relative to other criteria, including brand operating profits, category growth potential, intensity of competition, and other factors. Finally, we constructed a case of a brand that is marketed in three countries with different levels of BRiC. Respondents were asked whether they would prefer an uneven budget allocation.

Relative decision weight of brand relevance is measured by a constant-sum procedure to enforce trade-off decisions. On average, it is 25% (only brand profits are higher, at 29%). Of the respondents, 82% favored an uneven budget allocation. All preferred to spend the largest share on the country with the highest BRiC. Thus, the results strongly suggest that managers consider BRiC highly relevant information that affects their brand investment decisions.

### *THE BRiC CONCEPT*

#### *The BRiC Construct*

Previous research has noted that differentiation and the favorability and strength of associations are important facets of brand knowledge, which in turn is a fundamental source of customer-based brand equity (Keller 1993). Although two brands from two categories may bear resemblance to the level of brand knowledge, they do not necessarily need to be equally important to the customer. This is because the importance depends not only on the strength of brand

knowledge but also on the extent to which brand knowledge eventually affects customer decision making.

Cue utilization theory (e.g., Rescorla and Wagner 1972; Van Osselaer and Alba 2000) provides support for the varying importance of brands. Consistent with an associative learning model, people form associations from cues about an outcome, and adaptations to these associations depend on the extent to which predictions of the outcome diverge from the actual outcome. Brands serve as a cue, but the use of cues in product evaluation differs across categories.

The literature on utility-based brand equity measurement (for an overview, see Fischer 2007) also supports the notion of BRiC. When a consumer perceives differences in product features across brands, he or she assigns a constant weight to each feature when forming his or her utility. This weight may vary across consumers and categories but not across brands.

Brand relevance in category is a customer-oriented construct that measures such differences in the role of brands in customer decision making. Thus, it focuses on the category, not the individual brand. For a given category, we define BRiC as the extent to which the brand influences customer decision making relative to other decision criteria (e.g., purchase convenience, price).

Because BRiC does not vary across brands within a category, its concept is distinct from the meaning of widely used

brand constructs, such as brand awareness, brand knowledge, and brand equity, all of which apply to the individual brand (e.g., Aaker 1996; Keller 1993). Nevertheless, we acknowledge that the concept of brand relevance is not totally new; it is already included in brand equity measures, such as Young & Rubicam's customer-based brand equity model or Aaker's (1996) Brand Equity Ten concept (see also Riesenbeck and Perrey 2004). Because these measures focus on individual brands, they do not provide information on how much of the perceived relevance is attributed to the general role of brands in consumer decision making and how much is due to idiosyncratic benefits of the brand.

The concept of BRiC can be connected to several other constructs in the extant brand literature. Among those are antecedents of BRiC (e.g., brand functions); consequences of BRiC (e.g., brand loyalty); and the concepts of self-brand connection, brand engagement in self, brand possession, and brand relationship. Although an exhaustive review of this literature is beyond the scope of this article, we summarize the relationship of BRiC to these constructs in Table 1.

#### *Antecedents of BRiC: Brand Functions*

When customers believe that brands are important in their buying decision, they expect the brand to provide (intangible) benefits. The notion of brand functions has been widely discussed in the literature (e.g., Kapferer 2008; Keller 2008;

Table 1  
RELATIONSHIPS OF BRiC TO SELECTED OTHER BRAND CONSTRUCTS AND CONCEPTS

<i>Construct/Concept</i>	<i>Description of Construct/Concept</i>	<i>Description of Relationship with BRiC</i>
<i>Antecedents of BRiC</i>		
Risk reduction function of brands	Contribution of brands to reducing the consumer's (subjective) risk of making a purchase mistake (e.g., Kapferer 2008; Keller 2008).	The more important brands are for reducing perceived risks in a given category, the higher BRiC should be.
Social demonstrance function of brands	Use of brands as symbolic device to project and communicate the consumer's self-concept (e.g., Levy 1959).	The more important brands are for cultivating the consumer's self concept, the higher BRiC should be.
<i>Consequences of BRiC</i>		
Brand price premium	Ability of a brand to command a higher price than an unbranded equivalent product (Aaker 1991).	Higher BRiC indicates that brands are more relevant to the customer. As a consequence, customers are more inclined to rebuy the same preferred brand and pay more for that brand.
Brand loyalty	Commitment to rebuy a preferred brand in the future, thus causing repetitive same-brand purchasing (Oliver 1999).	
Brand equity	Assets and liabilities linked to a brand (Aaker 1991).	Price premium and loyalty are important sources for brand equity. Thus, BRiC favors the buildup of brand equity.
<i>Other Related Constructs and Concepts</i>		
Brand awareness	Likelihood that a brand name will come to mind and the ease with which it does so (Keller 1993).	Brand awareness and brand image constitute knowledge about brands, which is necessary to form individual customer-based brand equity. To the extent that those individual brand equities arise and grow in a category, their equity should be reflected in BRiC as brands become more relevant to customer decision making.
Brand image	Perceptions about a brand as reflected by the brand associations held in consumer memory. The uniqueness, clarity (or strength), and likability (or favorability) of brand associations form brand image (Keller 1993).	
Self-brand connection	Strength of the link between the self and a <i>particular</i> brand (Escalas and Bettman 2005).	The higher the number of customers with strong self-brand connections, the higher BRiC should be.
Brand engagement in self-concept (BESC)	<i>Generalized</i> tendency of a person to include brands as part of his or her self-concept (Spratt, Czellar, and Spangenberg 2009).	The higher the number of customers with high BESC, the higher BRiC should be.
Brand possession	Consumers own brands for the value they provide. The value of brand possessions resides in their public and private meanings (Belk 1988; Richins 1994).	Identity and self-expression are important sources of meanings that give an object value. To the extent that such connotations drive brand acquisition, BRiC should be higher.
Brand relationship	Brands may become an active relationship partner for the consumer and provide meanings in a psychosociocultural context (Fournier 1998).	Through personalization, brands gain in importance in the consumer's purchase decisions and life, which should be reflected in higher BRiC.

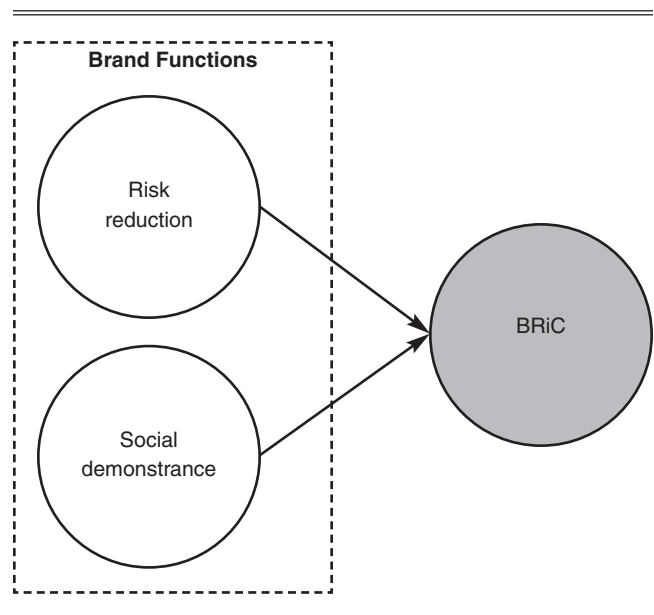
Mitchell and McGoldrick 1996; Riesenebeck and Perrey 2004). From this literature, two major functions, a risk reduction function and a social demonstration function, emerge that are relevant at different stages of the purchase and consumption process. Both brand functions are important antecedents of the BRiC construct at the customer level (see Figure 1).

**Risk reduction function.** Brands identify the source or maker of a product. Consumers recognize a brand and activate their knowledge about it (Zhang and Sood 2002). Using what they know about the brand in terms of overall quality and specific characteristics, consumers can form reasonable expectations about the functional and other benefits of the brand. Consequently, brands contribute to reducing the consumer's (subjective) risk of making a purchase mistake (e.g., Kapferer 2008; Keller 2008). From an information economics perspective, products can be classified into three categories—search, experience, and credence goods—that reflect the consumer's ability to assess product quality before actual product trial and usage (Darby and Karni 1974; Nelson 1970). Because of the difficulty in assessing product attributes and quality with experience and credence goods, it is also difficult to judge *ex ante* quality, and thus consumers may perceive high risks in product decisions. An important way consumers cope with these risks is to buy well-known brands, especially those with which consumers have had favorable past experiences (e.g., Aaker 1991; Keller 2008; Mitchell and McGoldrick 1996). Brands create trust in the expected performance of the product and provide continuity in the predictability of the product benefit. This is because they raise mean perceptions about quality and lower their variance. It follows that brands perform a risk reduction function, and we expect risk reduction to be an important determinant of BRiC. The more important brands are for reducing perceived risks in a given category, the higher BRiC should be.

**Social demonstration function.** In addition to the primarily functional benefit of risk reduction, brands can serve as symbolic devices that allow consumers to project their self-image (Levy 1959). In symbolic communication processes, brands can represent intrinsic values (e.g., self-expression) or extrinsic values (e.g., prestige), depending on whether the person is communicating with him- or herself or with his or her social surroundings (Grubb and Grathwohl 1967). The theories of self-congruity (Sirgy 1982) and self-enhancement (Shrauger 1975) provide explanations for why and how consumers strive for these symbolic benefits of brands. People try to preserve and enhance their self-concept by purchasing certain products (Shrauger 1975). To serve as a social symbol that contributes to achieving self-congruity, brands must allow for a personalization of the product. Thus, mobile phones or shoes are probably better suited for personalization than a home service for food.

The consumer's self does not develop in isolation but rather evolves within a complex process of social interaction (Grubb and Grathwohl 1967). Consumers use brands to communicate to others the type of person he or she is or would like to be (Belk 1988; Escalas and Bettman 2005). Specifically, they use brands as a status symbol or as a means to signal group membership. A prerequisite for the use of brands as status symbol is visibility that depends on product category. Traditions and cultural norms are other

Figure 1  
BRiC AND ITS ANTECEDENTS



important factors that influence the role of brands as status symbols. For example, Germans put more emphasis on cars than the French, probably because of their rich engineering tradition. The more important brands are for cultivating a certain public image, the higher BRiC should be.

#### Consequences of BRiC

Brand relevance in category is associated with several economic consequences at the customer level, firm level, and product-market level. In categories with higher brand relevance, customers have a greater demand for brand benefits, such as reduced risk, and the brand name plays a pronounced role in the buying decision. As a consequence, when brands are more relevant to customers, customers should be more willing to pay a higher price for a brand name product and should be more loyal to their preferred brand. Price premium and brand loyalty are important drivers of financial brand equity (e.g., Kapferer 2008). Thus, if customers' willingness to pay a price premium and to build a loyal brand relationship is greater as a result of BRiC in some categories, this should translate into a higher overall level of brand equity. Given that advertising is a major contributor to brand equity, we further conclude that advertising expenditures may be higher to capitalize on BRiC and grow brand equity.

Brand relevance in category may also have consequences for the emergence of business systems, brand cultures, and other market outcomes that affect firm behavior. For example, the business model of a low-cost airline works only if customers value the low fare but are also prepared to accept low service at the same time. In addition, customers may emphasize trust in the airline brand because it helps reduce the risks they associate with an airline trip. The BRiC construct reflects these consumer concerns and signals chances and risks for the successful implementation of a low-cost business model.

Finally, BRiC is likely to affect resource allocation at the firm level. In markets in which customers are more brand sensitive, demand is also more responsive to brand expenditures. Assuming profit maximization, the Dorfman–Steiner theorem (Dorfman and Steiner 1954) recommends guiding larger brand resources to these markets. The results of our initial management survey strongly support the relevance of BRiC for resource allocation decisions.

#### *Contingency Factors of BRiC*

Brand relevance is likely to vary across categories, countries, and types of products, which may be explained by several contingency factors. We assume that consumer characteristics, such as age and gender, moderate the impact of the two brand functions on BRiC. In addition, consumers may perceive the importance of brands as being different across categories because of differences in product-market characteristics, such as the degree of information asymmetry.

*Consumer heterogeneity.* Previous research on consumer behavior suggests that risk aversion increases with age (Pålsson 1996). Older people have collected more consumption experiences during their lifetime than younger people and place a higher value on continuity in their decision making. If avoiding risks is of higher value for older people, we would expect them to put a greater weight on the risk reduction function of brands when making a purchase decision. Thus, we expect a positive moderating effect of age on the influence of risk reduction on BRiC. In contrast, the moderating effect with respect to social demonstrance should be negative. Younger consumers are still developing their professional and “social” careers. Their need to demonstrate progress in life and personal achievements is stronger. Thus, they are likely to value the social demonstrance effect of brands more highly than older consumers, which in turn results in a greater weight assigned to the social demonstrance function of brands when making a purchase decision.

According to gender-related research (Byrnes, Miller, and Schafer 1999), men are less risk averse than women. Thus, we expect that risk reduction contributes more to BRiC for women than for men. However, it is difficult to find unidirectional arguments for gender-related differences with respect to the influence of the social demonstrance function. The value of brands as a signal to other consumers may be high for both male and female consumers. Consequently, we do not make a sign prediction but rather leave this as an empirical question.

*Product-market characteristics.* We postulate that there are several potentially relevant product-market characteristics that may explain differences in BRiC across categories. These characteristics arise from previous brand investments and competitive entries. They may also reflect differences in the buying or consumption process that are linked to the product.

We expect that the overall importance of brands (i.e., BRiC) is greater in categories when consumption is more visible to other people, the degree of homogeneity in functional benefits is higher, the frequency of new product introductions is higher, and the range of available brands is broader. Visibility of consumption (e.g., cars, sunglasses) is a necessary condition for consumers to capitalize on the social demonstrance effect of brands (Bearden and Etzel 1982). Thus, BRiC should be higher. In categories in which

products provide more or less the same level of (observable) functional benefits, consumers do not need to care about functional quality issues. If there is no variation in functional benefits, functional quality as a decision criterion loses in importance. As a consequence, other criteria, such as the brand name, compensate for the loss and gain in relative importance. Soft drinks and cigarettes are examples of categories with a high degree of homogeneity in functional benefits in which strong brands (e.g., Coca-Cola, Marlboro) have established themselves over time.<sup>1</sup> The frequency of new product introductions (e.g., the replacement of mobile phones or computers by the next generation) and the range of brands available to the consumer create a situation in which uncertainty is likely to be greater. Consumers are limited in their capacity to evaluate and memorize product information (Bettman, Luce, and Payne 1998). The brand name may provide the means to reduce the risk associated with the evaluation of a newly introduced product. It also helps lower the information costs that arise from assessing alternatives from a broader range of products (e.g., Erdem, Swait, and Valenzuela 2006).

We expect that the ability to judge product quality *ex ante* and the involvement in the decision process are negatively related to BRiC. Particularly in service industries, consumers are unable to assess product quality in advance. They need to trust the supplier of the service and often perceive a high risk associated with their decision (e.g., the safety of an airline, treatments by a physician). Brands may offer an important quality signal in advance that reduces the perceived risk (Erdem and Swait 1998). We expect that decision involvement decreases the importance of brands as a decision criterion because consumers spend more time collecting and evaluating information from various sources (Klink and Smith 2001). As a result, they are better informed and able to reduce the perceived risk. Thus, the brand signal loses in value.

Finally, we do not have a clear prediction on the influence of the extent of a group decision process on BRiC. In general, the level of information should be higher when more people contribute to the decision (Ward and Reingen 1990). This would suggest a negative effect on BRiC because individual information costs and uncertainty should be lower. However, group decisions are also a process in which conflicting interests and opinions need to be unified. The brand name might play an important role in such negotiation processes because it works as an anchor that channels divergent beliefs to a common denominator (Spiro 1983).

### SCALE DEVELOPMENT

#### *Item Generation and Scale Purification*

We developed new scales for the BRiC construct and its determining brand function constructs, risk reduction and social demonstrance. Following Churchill (1979), we generated an item pool for each construct. For this purpose, we screened the relevant literature on brand equity (e.g., Aaker 1996; Keller 2008), brand signaling (e.g., Belk 1988; Erdem

<sup>1</sup>Our homogeneity argument does not imply that brands have no relevance in highly differentiated product markets, such as for automobiles. However, the reasons for BRiC are presumably different here. The higher proportion of credence and experience attributes and visibility of consumption are likely to drive BRiC for automobiles.

and Swait 1998; Escalas and Bettman 2005; Mitchell and McGoldrick 1996), brand relationships/communities (e.g., Fournier 1998; Muniz and O'Guinn 2001), and brand benefits/brand functions (e.g., Aaker 1996; Kapferer 2008; Keller 2008). Next, we pretested the scale items in a focus group with three scholars and three practitioners for comprehension, logic, and relevance. We used their feedback to modify and adapt the items, which we then presented to three academic experts in brand management to assess the scale items' face and content validity. As a result, we retained a questionnaire of 19 items.

To purify the scales, we administered the 19-item questionnaire to a sample of 578 graduate students. On the basis of a confirmatory factor analysis and coefficient alphas, we discarded items whose indicator reliability or item-to-total correlation was below .40. If this procedure resulted in a scale of more than four items, we further excluded the items with lowest contribution to coefficient alpha to obtain a parsimonious measure. Given the reflective nature of the scales, exclusion of an item does not change the measure (e.g., Jarvis, MacKenzie, and Podsakoff 2003), but a scale with fewer items increases the chances for acceptance in practice because of lower market research costs. Finally, we excluded 7 of the 19 items, which left us with 4 items for each construct. Appendix A presents the 12 items for application to physical goods categories. We changed statements slightly for service and retail firms.

The social demonstrance function incorporates two facets: a symbolic or self-identity function (i.e., what brands say to others about me) and a group identity function (i.e., what brands say about other consumers). Recent research (Strizhakova, Coulter, and Price 2008) has suggested that these two facets do not discriminate but rather are part of a broader construct. We test this premise on the student sample. The results indicate that the two facets are not discriminating. Thus, we do not assume subdimensions for social demonstrance.

#### *Data Collection*

We collected data on the focal constructs in five countries: France, Japan, Spain, the United Kingdom, and the United States. The broad selection of countries from three continents helps establish the generalizability of the scale in an international context. Moreover, it offers important insights into differences in perceived BRiC between countries, which should improve our understanding of varying cross-national challenges in brand management (e.g., Keller 2008; Tavassoli 2007). In addition, we apply the new scales to a broad selection of product categories. For this purpose, we collected data in 20 categories covering FMCG, consumer durables, services, and retailers. We selected these categories because they target the broad population, which strengthens generalizability across consumers. All categories are established categories with comparable high importance for the economy of the five countries. Of the categories, 17 are included in the American Customer Satisfaction Index (ACSI), which claims to cover 65% of the U.S. gross domestic product. Following recent studies in a multinational context (e.g., Erdem, Swait, and Valenzuela 2006; Steenkamp and Geyskens 2006), we collected data through the Internet. The application of a uniform data col-

lection procedure, such as an online survey, helps control for response styles in cross-national research (Adler 1983).

A professional firm specializing in online market research collected data from May to July in 2006. Respondents were randomly invited by e-mail to take part in the survey. The sampling distribution of age-by-gender groups matches the actual distribution in the country—that is, there are no significant differences ( $p > .05$ ). A comparison of the averages of age and gender between late and early respondents did not indicate statistically significant differences ( $p > .05$ ).

The English questionnaire was translated and then back translated into French, Japanese, and Spanish by native speakers. Appropriate screener questions at the beginning ensured that respondents were familiar with the categories. Each respondent provided answers for two categories. They were asked to imagine themselves in a typical situation in which they purchase a product or service, sign a contract, or choose a retailer. In addition to the three focal constructs, several other questions were asked to collect data for single-item and multi-item measures, which we use for scale validation purposes. We provide details on these measures subsequently.

A total of 6168 consumers (on average, more than 1200 per country) took part in the survey. We eliminated 399 respondents (6.5%) who showed a uniform response style (standard deviation of responses across all items is less than .2) or who completed the questionnaire in less than 6 minutes. A pretest revealed that participants needed at least 6 minutes to read all items and mark their answer. The average time needed to complete the questionnaire was 14 minutes.

#### *Structural Equation Model Analysis*

Consistent with Figure 1, we estimate a structural equation model (SEM) that links the multi-item scale for BRiC with the two multi-item brand function scales using a multi-group (i.e., five countries) latent variable modeling approach (e.g., Byrne 2001; Kline 1998).<sup>2</sup> We accomplished the estimation with maximum likelihood, which assumes multivariate normal data and a reasonable sample size. The sample is sufficiently large, and multivariate tests of normality based on skewness and kurtosis of the observed variables do not indicate any issues with the normality assumption (e.g., Bollen 1989).

All factor loadings are highly significant ( $t$ -values  $> 40$ ) and are strongly related to their respective constructs. The three constructs display satisfactory levels of internal consistency, as indicated by individual-item reliabilities ranging from .553 to .784 in the pooled data set, average variance extracted (AVE) estimates ranging from .405 to .508, and composite reliabilities ranging from .731 to .805 (e.g., Bagozzi and Yi 1988). Coefficient alphas range from .900 to .928, exceeding the suggested threshold (Nunnally 1978). The common fit indexes of the multigroup SEM indicate that the model fits the data well (Byrne 2001): root mean square error of approximation (RMSEA) = .035, the comparative fit index (CFI) = .988, and the Tucker–Lewis

<sup>2</sup>In a first step, we ran exploratory factor analyses to explore the dimensionality of the data. We obtained three factors. All factor loadings are highly related to their corresponding construct, and explained variance estimates are sufficiently high for all constructs.

index (TLI) = .983. The two brand functions explain 71.4% of the variance in BRiC in the pooled country sample (for details by country, see Table W1 in Web Appendix B at <http://www.marketingpower.com/jmroct10>).

In addition, we conduct a test of discriminant validity for the two brand functions of risk reduction and social demonstration. Each of the shared variance estimates at the country level and the pooled sample level (.508 and .475 in the pooled sample) exceeds the square of the corresponding phi coefficient (.201), which provides evidence of discriminant validity (Fornell and Larcker 1981). Full details on the psychometric properties of the scales by country appear in Table W2 in Web Appendix B (<http://www.marketingpower.com/jmroct10>).

We also test whether the social demonstration function consists of two distinct subdimensions, a symbolic function (Items 1 and 2 in Appendix A) and a group identity function (Items 3 and 4). The squared correlation between the two subdimensions in the pooled sample is .743 and clearly exceeds the AVEs (.580 and .565), suggesting that these subdimensions are not distinct (for country details, see Table W3 in Web Appendix B at <http://www.marketingpower.com/jmroct10>).

An important goal of the research is to investigate differences in BRiC across countries and categories using the latent construct means. For such comparisons to be meaningful, the scales used to measure the constructs must exhibit adequate cross-national equivalence. Specifically, we employ a five-group SEM analysis to assess cross-national configural, metric, and scalar invariance across the three constructs (e.g., Steenkamp and Baumgartner 1998). Full metric and scalar invariance are rarely evident in cross-national research, but partial invariance is desired (Erdem, Swait, and Valenzuela 2006; Steenkamp and Geykens 2006). In addition to the marker item, at least one scale item measuring the latent construct should be invariant.<sup>3</sup> We find that all factor loadings are statistically significant in the five country samples and exhibit a similar pattern of loadings, indicating that the measures exhibit configural invariance. A comparison of common information criteria and fit indexes that take into account model parsimony indicates that they are virtually identical or even improve when we impose invariance restrictions. Specifically, information criteria decrease; that is, they improve ( $\Delta$ Bayesian information criterion =  $-41.10$ ;  $\Delta$ consistent Akaike information criterion =  $-41.10$ ) when the invariance restrictions are imposed. Furthermore, the fit indexes improve or at least do not change ( $RMSEA_{\text{free}} = .036$ ,  $RMSEA_{\text{restricted}} = .035$ ,  $TLI_{\text{free}} = .983$ ,  $TLI_{\text{restricted}} = .983$ ). Thus, we establish partial metric and scalar invariance for the data.

#### *Assessing Convergent, Nomological, and Discriminant Validity*

We extend the assessment of construct validity. Specifically, we relate the BRiC scale to measures that were developed for purposes other than measuring BRiC.

*Convergent validity.* To investigate convergent validity, we need to measure the degree to which the BRiC construct is consistent with alternative approaches to measure BRiC. In our definition, we refer to the extent to which the brand name influences customers compared with other decision criteria, such as price. Thus, the construct has much in common with the utility or taste parameter obtained from preference measurement models, such as conjoint models. In a conjoint model, BRiC is represented by the overall weight for the brand attribute.

We employ a constant-sum approach to directly obtain purchase decision weights for brand and other attributes from the survey participants (for measurement details, see Appendix B). Previous research (Fischer 2007; Srinivasan and Park 1997) has found that simpler, self-explicated methods often show similar performance to complex conjoint tasks.

In addition, we searched the literature (1990–2006) for published conjoint studies that include brand as an attribute. From 112 studies, we were able to use 56 importance weights for the brand attribute to correlate with the BRiC construct because the categories are identical or reasonably comparable to the 20 categories in our data set. The importance weight is defined as the maximum difference between estimated partworth utilities for the brand attribute divided by the sum of maximum differences across all attributes. Thus, it is a normalized percentage measure that is not subject to utility scaling issues. We acknowledge that brand weights from previous conjoint studies are a noisy measure due to uncontrollable influences, such as method, choice of participants, and definition of product category. However, we believe that the use of these external data provides a conservative test of convergent validity, and we approximate the measurement error in the data by variance decomposition. Specifically, the within-group variance (of replication studies) provides the estimate of error variance (for details, see Table 2).

Table 2 reports the correlation of BRiC with the two alternative measures of convergent validity. Because the measurement error in variables biases the correlation downward, we correct for this bias when information on measurement error is available (Kline 1998).<sup>4</sup> The correlation of BRiC with both measures is manifest and supports convergent validity.

*Nomological validity.* Nomological validity refers to the degree to which the BRiC construct is related to measures of other constructs in a manner that is consistent with theory (Carmines and Zeller 1979). In our discussion of the concept, we emphasize two brand-related behavioral outcomes—willingness to pay a price premium and brand loyalty—that should be positively correlated with BRiC. We directly ask for consumers' willingness to pay a price premium for brand name products. To measure brand loyalty, we adopt the multi-item measure that Ailawadi, Neslin, and Gedenk (2001) suggest (see Appendix B).

The conceptual discussion also suggests that BRiC should positively correlate with two aggregate-level meas-

<sup>3</sup>To assign a scale metric to the latent variable, the factor loading of one item ("marker item") per factor is set to be equal to one. The intercept of each marker item is fixed to zero in all groups to fix the origin of the scale (Steenkamp and Baumgartner 1998).

<sup>4</sup>Let  $r_A$  and  $r_B$  be measures of reliability for construct A and B. Then, the theoretical limit of correlation between A and B is no longer  $\pm 1$  but rather  $\pm \sqrt{r_A r_B}$ . Thus, we use the multiplier  $1/\sqrt{r_A r_B}$  to correct for measurement error in estimated correlation coefficients.

Table 2  
CORRELATION MATRIX FOR CONVERGENT AND NOMOLOGICAL VALIDITY TESTS

Measure	Number of Items	N	Coefficient Alpha	Correlation with BRiC
<i>Focal</i>				
BRiC	4	—	.900	—
<i>Main Survey</i>				
<i>Convergent Validity</i>				
Constant-sum brand importance weight	1	11,539	—	.567**
<i>Nomological Validity</i>				
Price premium	1	11,539	—	.655**
Brand loyalty	3	11,539	.872	.781**
<i>External Data</i>				
<i>Convergent Validity</i>				
Conjoint brand importance weight	N.A.	56	.741 <sup>a</sup>	.540**
<i>Nomological Validity</i>				
Advertising expenditures	N.A.	19	—	.417*
Brand equity	N.A.	15	—	.521*

\* $p < .10$ .

\*\* $p < .05$ .

<sup>a</sup>Reliability coefficient for external conjoint data is obtained from variance decomposition. For this purpose, we created groups along the dimensions category, country, and time (1990–1999, 2000–2006). Conjoint studies within one group are considered replication studies. The within-group variance provides the estimate of error variance. Reliability is defined as  $1 - (\text{error variance}/\text{total variance})$ .

Notes: Estimates of correlation coefficients are corrected for measurement error in variables. Note that significance estimates for samples with  $N < 30$  should be interpreted with caution. N.A. = not applicable.

ures: the level of advertising expenditures and the level of brand equity in the category. We use data from Standard & Poor's COMPUSTAT database and Interbrand's list of Top 100 Brands in 2004–2006 to estimate these aggregate-level data. Advertising expenditures of 397 firms and brand equities of 109 brands are aggregated to provide average annual values per category for the 2004–2006 period (for details, see Appendix B). We calculate gross domestic product-weighted mean BRiC scores across the five countries because the aggregate-level data refer to the global market.<sup>5</sup>

Table 2 shows strong and significant correlations between BRiC and all measures of nomological validity. Because correlations for the external measures are based on small sample sizes, we test their robustness by calculating partial correlation coefficients that control for category sales, mean firm market share, number of firms, or competitive intensity (Herfindahl index). We also exclude extreme observations on both sides of the sample distribution. Unsurprisingly, standard errors increase, but correlations always remain above .30.

*Discriminant validity.* Discriminant validity refers to the degree to which the proposed scale assesses the BRiC construct and not other constructs (Churchill 1979; Peter 1981). We analyze the association between BRiC and several customer-level brand measures: brand awareness, brand consideration, brand uniqueness, brand clarity, and brand likability. These constructs are established facets of brand knowledge and brand image, both of which contribute to brand equity (e.g., Aaker 1996; Keller 1993; Roberts and

Lattin 1991). The BRiC construct represents another source of brand equity. However, its meaning is not related to the domains of brand knowledge and brand image constructs. For example, we may observe categories with deep brand knowledge and high brand likability but low BRiC, and vice versa. We directly ask respondents whether they know many brands in a category and how many they usually consider buying. Following Keller (1993), we develop multi-item measures for brand uniqueness and brand clarity in the category. For measuring overall brand likability in a category, we adopt Mitchell's (1986) multi-item measure (for details, see Appendix B).

We also consider an external measure. The ACSI reports annual data for 17 of the 20 categories/industries ([www.theacsi.org](http://www.theacsi.org)). We correlate 2006 and 2008 ACSI data with BRiC values that we obtained in the United States in 2006 and 2008 (replication study). Satisfaction is a key driver of customer equity. Brand equity and customer equity both represent important market-based assets, whereas some researchers consider brand equity a subset of customer equity (e.g., Rust, Lemon, and Zeithaml 2004). Thus, it appears that BRiC and the ACSI are closely related to each other. However, we believe that both measures reflect distinct theoretical concepts.

Table 3 reports the results of the discriminant validity tests. For the multi-item measures, we compare the squared correlation of constructs with the AVE obtained from confirmatory factor analyses (Fornell and Larcker 1981). For all measures, the AVE exceeds the squared correlation. Squared correlations of BRiC with the single-item measures are also low, suggesting that the alternative measures do discriminate from the BRiC construct.

#### Replication Study

To assess the reliability of the psychometric properties of the suggested scales, we obtained data again in representative surveys in France, the United Kingdom, and the United States

<sup>5</sup>We acknowledge that we might underestimate true category-level advertising expenditures and brand equity because data are not available for all companies and their brands. However, we believe that the estimates are reasonably close to the true values because both COMPUSTAT and Interbrand include companies and brands that are among the largest. Note that in the Interbrand Top 100 Brands list during the 2004–2006 period, the mean equity of the top decile is already 13.7 times larger than that of the bottom decile.



Table 3  
DISCRIMINANT VALIDITY TESTS FOR BRiC

	Number of Items	N	Coefficient Alpha	AVE	Squared Correlation with BRiC
<i>Focal Measure</i>					
BRiC	4	—	.900	.405	—
<i>Main Survey</i>					
<i>Multi-Item Measures</i>					
Brand uniqueness	2	11,539	.806	.444	.304
Brand clarity	3	11,539	.895	.496	.191
Brand likability	3	11,539	.879	.614	.119
<i>Single-Item Measures</i>					
Brand awareness	1	11,539	—	—	.151
Consideration set size	1	11,539	—	—	-.002
<i>External Data</i>					
U.S. customer satisfaction index	N.A.	34	—	—	.006 <sup>n.s.</sup>

Notes: n.s. = not significant ( $p > .10$ ). Estimates of squared correlation account for measurement error in variables. N.A. = not applicable.

two-and-a-half years later. The same firm collected data using identical sampling procedures and a reduced questionnaire to measure the focal scales in November–December 2008. In each country, 700 consumers provided answers for 2 categories randomly chosen from 20 categories.

We obtain similar results as the first survey from 2006. The common fit indexes indicate that the multigroup (three countries) SEM fits the data well (RMSEA = .049, CFI = .987, and TLI = .982). Again, we can establish partial metric and scalar invariance for the data. Finally, the common statistics of reliability and discriminant validity are comparable and meet the threshold levels (for details, see Tables W1, W2, and W3 in Web Appendix B at <http://www.marketingpower.com/jmroct10>). Thus, we conclude that the psychometric properties of the new scales are robust and reliable over time.

#### DIFFERENCES IN BRiC ACROSS CONSUMERS, COUNTRIES, PRODUCT CATEGORIES, AND TIME

In this section, we report on the results from the 2006 survey in five countries. We use data from the replication study in 2008 to investigate BRiC over time.

#### Descriptive Results

As expected, we find substantial and significant differences across product categories in terms of both overall brand relevance (BRiC,  $F_{19, 11,520} = 54.68, p < .01$ ) and its determinants (brand functions)—that is, risk reduction ( $F_{19, 11,520} = 33.98, p < .01$ ) and social demonstrance ( $F_{19, 11,520} = 14.75, p < .01$ ). Table 4 displays the rankings of categories in terms of BRiC for each country. Across all five countries, we find the highest BRiC values in the categories medium-sized cars ( $M_{BRiC} = 3.75$ ) and cigarettes ( $M_{BRiC} = 3.69$ ) and the lowest values in the categories drugstores ( $M_{BRiC} = 2.58$ ) and paper tissues ( $M_{BRiC} = 2.22$ ). Medium-sized cars are also on top in terms of the brands' risk reduction function ( $M_{RISK} = 4.09$ ) and their social demonstrance function ( $M_{DEM} = 2.53$ ). For the latter, we find that designer sunglasses rank second highest ( $M_{DEM} = 2.52$ ), whereas their value for BRiC and risk reduction is average. We find a consistent ranking pattern of BRiC across countries for categories such as cars or drugstores (see Table 4). However, this result should not be generalized

to all categories. Customers from Japan, Spain, and the United States view the importance of brands in categories such as television sets, personal computers, and mail order differently. We note a striking difference in BRiC for private airline trips between France and the United Kingdom. Private airline trips have the second-largest BRiC in France ( $M_{BRiC} = 3.65$ ), whereas the value is in the lowest third in the United Kingdom ( $M_{BRiC} = 2.87$ ). The distribution of market shares between low-cost carriers and brand name carriers appears to be consistent with this picture. Low-cost carriers achieved a market share of 37% in the United Kingdom in 2005 but had less than 5% in France (Civil Aviation Authority 2006). To summarize, brands are perceived as equally important across countries in some categories, such as cars, beer, and cigarettes, but this does not generalize to other categories. Therefore, it is necessary to examine each country individually to identify differences in brand importance for a specific category.

Table 5 shows that the importance of brands and their functions for consumer decision making also varies across countries and types of goods. Mean difference tests are based on a t-test for groups with unequal variances because the homoskedasticity assumption is violated for the data. The United States leads in BRiC ( $M_{BRiC} = 3.42$ ) as well as in its determinants risk reduction ( $M_{RISK} = 3.89$ ) and social demonstrance ( $M_{DEM} = 2.59$ ). The United States has implemented the idea of economic freedom for a long time, and the principles of modern marketing were born here. These conditions produced highly competitive product markets with a large variety of products and services. Brands play an important role in guiding the consumer decision under such circumstances; in particular, they provide a means to reduce risks and to self-express. Notably, Japan ranks second to last for BRiC and risk reduction, but it has the highest mean value for social demonstrance, after the United States. The strong growth of luxury brands in recent years in Japan and other Asian countries seems to reflect the importance of the social demonstrance effects in these countries. Luxury brands are a perfect means to communicate social identity to other consumers. Finally, we do not find significant differences between France and Spain, which are close in both cultural and geographic terms.

Table 4  
LATENT CONSTRUCT MEANS OF BRIC BY PRODUCT CATEGORY AND COUNTRY (LATENT MEANS IN PARENTHESES)

Rank	France			Japan			Spain			United Kingdom			United States		
	Latent Construct	Mean	Rank	Latent Construct	Mean	Rank	Latent Construct	Mean	Rank	Latent Construct	Mean	Rank	Latent Construct	Mean	Rank
1	Medium-sized vehicles	(3.70)		Medium-sized vehicles	(3.81)		Cigarettes	(3.95)		Cigarettes	(3.96)		Beer	(4.26)	
2	Scheduled flights	(3.65)		Mobile network operators	(3.55)		Beer	(3.54)		Beer	(3.77)		Medium-sized vehicles	(4.05)	
3	Cigarettes	(3.57)		Television sets	(3.50)		Mobile phones	(3.54)		Medium-sized vehicles	(3.70)		Personal computers	(3.85)	
4	Mobile network operators	(3.48)		Personal computers	(3.36)		Designer sunglasses	(3.46)		Mobile phones	(3.45)		Cigarettes	(3.80)	
5	Mobile phones	(3.38)		Bank accounts	(3.25)		Mobile phones	(3.41)		Television sets	(3.29)		Mobile network operators	(3.79)	
6	Mail order	(3.37)		Scheduled flights	(3.22)		Television sets	(3.35)		Mobile network operators	(3.26)		Fast-food restaurants	(3.71)	
7	Beer	(3.31)		Designer sunglasses	(3.19)		Mobile network operators	(3.31)		Fast-food restaurants	(3.23)		Express deliveries	(3.65)	
8	Fast-food restaurants	(3.29)		Car insurances	(3.17)		Mail order	(3.28)		Personal computers	(3.20)		Television sets	(3.62)	
9	Bank accounts	(3.27)		Cigarettes	(3.15)		Bank accounts	(3.27)		Bank accounts	(3.18)		Mobile phones	(3.61)	
10	Designer sunglasses	(3.24)		Mail order	(3.11)		Express deliveries	(3.20)		Designer sunglasses	(3.17)		Detergents	(3.51)	
11	Personal computers	(3.21)		Mobile phones	(3.09)		Fast-food restaurants	(3.15)		Mail order	(3.11)		Scheduled flights	(3.44)	
12	Television sets	(3.16)		Headache tablets	(3.04)		Car insurances	(3.08)		Express deliveries	(2.97)		Headache tablets	(3.37)	
13	Express deliveries	(3.11)		Beer	(3.04)		Scheduled flights	(3.04)		Department stores	(2.92)		Designer sunglasses	(3.33)	
14	Detergents	(2.98)		Fast-food restaurants	(3.03)		Personal computers	(2.98)		Scheduled flights	(2.87)		Mail order	(3.28)	
15	Department stores	(2.94)		Express deliveries	(2.92)		Detergents	(2.94)		Detergents	(2.85)		Car insurances	(3.18)	
16	Car insurances	(2.80)		Department stores	(2.91)		Department stores	(2.92)		Leisure wear	(2.72)		Bank accounts	(3.13)	
17	Headache tablets	(2.75)		Leisure wear	(2.73)		Headache tablets	(2.66)		Drugstores	(2.56)		Paper tissues	(3.13)	
18	Drugstores	(2.58)		Detergents	(2.65)		Leisure wear	(2.58)		Headache tablets	(2.51)		Department stores	(2.92)	
19	Leisure wear	(2.47)		Drugstores	(2.49)		Drugstores	(2.43)		Car insurances	(2.49)		Drugstores	(2.90)	
20	Paper tissues	(1.89)		Paper tissues	(2.21)		Paper tissues	(1.81)		Paper tissues	(2.24)		Leisure wear	(2.71)	

Notes: Bold entries represent a consistent ranking pattern across countries.

**Table 5**  
LATENT CONSTRUCT MEANS OF BRiC AND BRAND FUNCTIONS BY COUNTRIES AND TYPES OF GOODS

A: Latent Means Across Countries					
BRiC	Risk Reduction		Social Demonstration		
United States	3.42*	United States	3.89*	United States	2.59*
France	3.12	Spain	3.75	Japan	2.29
Spain	3.07	France	3.65*	United Kingdom	2.26*
Japan	3.06	Japan	3.33*	France	1.83
United Kingdom	3.04	United Kingdom	3.13	Spain	1.83
F (4, 11,534) = 32.63*		F (4, 11,534) = 129.51*		F (4, 11,534) = 152.39*	
B: Latent Means Across Types of Goods					
BRiC	Risk Reduction		Social Demonstration		
Durables	3.29	Durables	3.69	Durables	2.28
Services	3.22*	Services	3.63*	Services	2.25*
FMCG	3.06*	Retail	3.45	Retail	2.02
Retail	2.94	FMCG	3.38	FMCG	1.95
F (3, 11,535) = 46.09*		F (3, 11,535) = 34.00*		F (3, 11,535) = 46.96*	

Notes: Significant mean difference ( $p < .05$ ) between a country (type of goods) and the next country (next type of good) down the list is indicated by an asterisk. For overall brand relevance and countries, as an example, mean BRiC for the United States is significantly higher than for France, but mean BRiC for France does not significantly differ from Spain's mean BRiC.

Table 5 demonstrates that there are also differences in brand relevance between types of goods. Durables rank highest on all three constructs ( $M_{BRiC} = 3.29$ ,  $M_{RISK} = 3.69$ ,  $M_{DEM} = 2.28$ ). It is plausible to find durables on top of the lists because these products are often expensive and used to demonstrate the social status of the owner. We find significant differences in terms of risk reduction and social demonstration between services on one side and FMCG and retail businesses on the other side. However, the results for the type of goods should be interpreted with caution because we do not cover the full range of categories within each type.

*Analysis of Contingency Factors*

In line with the conceptual discussion on the role of contingency factors for BRiC, we regress latent BRiC values on product-market characteristics and the two brand functions whose impact is moderated by consumer characteristics.

*Model specification.* We model the formation of BRiC as follows:

$$(1) \text{BRiC}_{ikl} = \alpha_0 + \beta_1 \text{RISK}_{ikl} + \beta_2 \text{DEM}_{ikl} + \gamma_1 \text{V\_Cons}_k + \gamma_2 \text{Homog}_k + \gamma_3 \text{Freq}_k + \gamma_4 \text{No\_Brd}_k + \gamma_5 \text{Exp\_Qual}_k + \gamma_6 \text{Dc\_Inv}_k + \gamma_7 \text{Group\_Dc}_k + v_k + \tau_l + u_{ikl},$$

with  $v_k$  i.i.d.  $N(0, \sigma_v^2)$ ,  $\tau_l$  i.i.d.  $N(0, \sigma_\tau^2)$ , and  $u_{ikl}$  i.i.d.  $N(0, \sigma_u^2)$ .

where

- BRiC<sub>ikl</sub> = brand relevance in category perceived by individual i for category k in country l;
- RISK<sub>ikl</sub> = risk reduction perceived by individual i for category k in country l;

DEM<sub>ikl</sub> = social demonstration perceived by individual i for category k in country l;

V\_Cons<sub>k</sub> = visibility of consumption in category k;

Homog<sub>k</sub> = degree of homogeneity in functional benefits in category k;

Freq<sub>k</sub> = frequency of new product introductions in category k;

No\_Brd<sub>k</sub> = number of brands available in category k;

Exp\_Qual<sub>k</sub> = ability to judge quality *ex ante* in category k;

Dc\_Inv<sub>k</sub> = decision involvement in category k;

Group\_Dc<sub>k</sub> = extent of group decision making in category k;

$\alpha, \beta, \gamma$  = (unobserved) parameter vectors;

$v, \tau, u, \sigma^2$  = error terms and variances;

$i = 1, 2, \dots, I$  (number of individuals);

$k = 1, 2, \dots, K$  (number of categories); and

$l = 1, 2, \dots, L$  (number of countries).

Our model includes three types of errors: a category-specific error,  $v_k$ ; a country-specific error,  $\tau_l$ ; and an idiosyncratic error,  $u_{ikl}$ . We assume that these errors are uncorrelated. As a result, the error variance is  $\text{Var}(v_k + \tau_l + u_{ikl}) = \sigma_v^2 + \sigma_\tau^2 + \sigma_u^2$ . This structure implies that errors are correlated across categories within a country and across countries within a category, reflecting the joint impact of omitted variables at the category and country level.

Consistent with our conceptualization, we assume that consumers are heterogeneous with respect to the relative contribution of the brand functions to the formation of BRiC. Specifically, we view gender and age as important moderators. However, there are likely to be other unobserved heterogeneity factors, such as lifestyle variables, that may explain differences in the importance of the two brand functions. We model consumer heterogeneity in the  $\beta$  coefficients that are associated with risk reduction and social demonstration as follows:

$$(2) \beta_i = \bar{\beta} + \delta_1 \text{Sex}_i + \delta_2 \text{Age}_i + \omega_i, \text{ with } \omega_i \text{ i.i.d. } N(0, \Sigma),$$

where  $\text{Sex}_i$  measures the gender of individual i,  $\text{Age}_i$  denotes the age of individual i, and  $\omega_i$  represents a vector of individual-specific deviations from the mean vector  $\bar{\beta}$  that are assumed to be normally distributed with zero mean and variance-covariance matrix  $\Sigma$ . The term  $\omega_i$  captures the influence of unobserved heterogeneity factors.

*Data collection.* Information on the constructs BRiC, risk reduction, and social demonstration, as well as on gender and age, is provided by the respondents in the survey. For product-market characteristics, we collected data from an external panel of 30 marketing experts (for details, see Appendix B). Half of them are from industry, and the other half are academics. All experts have considerable international marketing experience and indicated that they are qualified to evaluate the 20 categories. We note considerable convergence in the answers as measured by the coefficient of variation (mean divided by standard deviation). Nevertheless, we acknowledge that ratings from multiple raters can bias model estimates because of errors in individual informants' responses. To correct for these errors, we apply the confidence-based weighting procedure to aggregate responses, as Van Bruggen, Lilien, and Kacker (2002) sug-

gest. This procedure uses informants' self-assessed confidence in the accuracy of their answers to weight responses.

*Estimation results.* Substituting Equation 2 into Equation 1 produces the full estimation equation, which we estimate using the simulated maximum likelihood technique (Greene 2008). We present estimation results using the rater bias-adjusted ratings from experts in Table 6. To enable a direct comparison of effects across predictors, we report standardized coefficients that are associated with z-transformed predictors. Model fit is good. Ordinary least square-based R-square, which does not account for consumer heterogeneity, amounts to .614. Collinearity among regressors is not an issue. The variance inflation factor never exceeds the critical value of 10 (Greene 2008).

Estimation results confirm our expectations. Risk reduction and social demonstrance are significant drivers of BRiC. On average, the contribution of risk reduction to BRiC is more than three times greater than that of social demonstrance ( $\beta_1 = .823, p < .05$  versus  $\beta_2 = .250, p < .05$ ). Gender and age are important moderators of the influence of brand functions on BRiC. The relative importance of risk reduction is greater for women ( $\delta_{11} = .035, p < .05$ ) and for older people ( $\delta_{12} = .098, p < .05$ ). Gender does not seem to moderate the effect of social demonstrance ( $\delta_{21} = -.009, p > .05$ ), but age does ( $\delta_{22} = -.087, p < .05$ ). Other, unobserved consumer-specific factors also moderate the effects of risk reduction and social demonstrance on BRiC, as reflected in the significant standard deviations of the random components ( $\sigma_{0,1} = .137, \sigma_{0,2} = .111; p < .05$ ).

We also find strong evidence for the impact of product-market characteristics on BRiC. Products that are consumed in public are associated with higher BRiC ( $\gamma_1 = .057, p < .05$ ), and BRiC is higher when functional benefits are more homogeneous ( $\gamma_2 = .046, p < .05$ ). We also find evidence for the assumed positive effect of the frequency of new product introductions on BRiC ( $\gamma_3 = .056, p < .05$ ). Consistent with our expectation, we find that BRiC is higher in categories with a larger assortment of brands ( $\gamma_4 = .036, p < .05$ ), and BRiC is lower in markets in which product quality can be easily judged in advance ( $\gamma_5 = -.103, p < .05$ ). Consistent with our expectation, BRiC is lower for products for which the decision involvement is high ( $\gamma_6 = -.070, p < .05$ ). We could not derive a sign prediction for the extent of group decision making based on theoretical arguments. Notably, we find that brands are also more important to consumers in such situations ( $\gamma_7 = .084, p < .05$ ). To summarize, the selected product-market characteristics indeed provide important insights into the drivers of BRiC across categories.

#### Analysis of BRiC over Time

The replication study in France, the United Kingdom, and the United States two-and-a-half years later enables us to explore the relative stability of brand relevance over time. From a theoretical perspective, we would expect that BRiC evolves only slowly over time because it measures customers' predispositions, which should be stable. From a managerial perspective, stability is also desirable because brand decisions usually focus on the long term.

The data reveal a high degree of stability. The 2008 and 2006 values correlate strongly with each other across the three countries at .938 ( $p < .05; N = 60$ ). The average change in BRiC is only +1.2%. Categorywise mean differ-

Table 6  
RATER-BIAS CORRECTED REGRESSION RESULTS OF  
CONTINGENCY FACTOR ANALYSIS

	Expected Sign	Dependent Variable: BRiC	
		Standardized Coefficient <sup>a</sup>	(SE)
Constant		3.13	(.007)
<i>Brand Functions and</i>			
<i>Consumer Characteristics</i>			
Risk reduction	+	.823	(.020)
Risk reduction × sex (male = 0/female = 1)	+	.035	(.014)
Risk reduction × age	+	.098	(.022)
Standard deviation		.137	(.007)
Social demonstrance	+	.250	(.028)
Social demonstrance × sex	+/-	-.009	(.014) <sup>n.s.</sup>
Social demonstrance × age	-	-.087	(.029)
Standard deviation		.111	(.006)
<i>Product-Market Characteristics</i>			
Visibility of consumption	+	.057	(.010)
Degree of homogeneity in functional benefits	+	.046	(.014)
Frequency of new product introductions	+	.056	(.015)
Number of available brands	+	.036	(.009)
Ability to judge quality <i>ex ante</i>	-	-.103	(.010)
Decision involvement	-	-.070	(.021)
Group decision making	+/-	.084	(.017)
<i>Error Components</i>			
Country-specific error standard deviation		.521	(.005)
Category-specific error standard deviation		.032	(.006)
Idiosyncratic error standard deviation		.590	(.003)
Number of respondents		5759 <sup>b</sup>	
Log-likelihood		-12,954.40	

<sup>a</sup>Standardization comes from z-transformation of predictor variables.

<sup>b</sup>We excluded ten people because they evaluated only one product category.

Notes: n.s. = not significant ( $p > .05$ ), based on two-sided t-test.

ence tests show that for the vast majority of categories, changes are not significant and are probably due to sampling error. Nevertheless, we find a few significant changes in BRiC at  $p < .05$ . Relevance increased for bank accounts and car insurance in France and the United Kingdom (bank accounts in France only at  $p < .10$ ) as well as for paper tissues in the United Kingdom. It decreased for mobile network providers in the United States and for cigarettes in the United Kingdom. We note some possible explanations for these results.

In fall 2008, a severe global financial crisis took its course after the collapse of the investment bank Lehman Brothers. In the United Kingdom, Northern Rock, a retail bank, went bankrupt, creating high uncertainty about the safety of bank deposits among the British population. In the United States, the world's largest insurer, AIG, began to tumble. The increase in brand relevance in our two financial products categories seems to reflect a rise in perceived uncertainty in consumer decisions. Brands provide an important anchor for consumers in such turbulent times.

The decrease in brand relevance for cigarettes in the United Kingdom may be explained by recent regulatory procedures of the British government to condemn cigarette

consumption. Between 2002 and 2006, the government enacted several advertising bans. As a result, advertising expenditures fell by 90% from a mean level of £25.5 million in 1998–2002 to £2.3 million in 2003–2007 (World Advertising Research Center 2008). Because brand investments are necessary to sustain brand equity, we believe that the decrease in BRiC is a result of the extreme cutbacks in brand expenditures.

#### *DISCUSSION, LIMITATIONS, AND FURTHER RESEARCH*

##### *Managerial Value of BRiC*

Information on BRiC can be of significant help to managers in making better brand decisions. For top management, the question is how to react to differences in BRiC across categories and/or countries. In a high-BRiC market, brand expenditures are likely to be higher because the brand is a key criterion in product choice. Ignoring this reality for brand investment decisions might result in lower market share and lower profits. Thus, firms are well advised to provide enough resources for the brand.

The results (see Table 4) reveal some noteworthy differences in BRiC across categories within a country as well as across countries within a category. Managers operating in these markets can use the results to revise their budget allocation decisions. For example, the findings suggest a disproportionate allocation of investments in express delivery brands across national markets. Brand relevance in category is substantially higher in the United States than in Asian and European countries. High BRiC paired with the size of the country and two strong incumbent brands, FedEx and UPS, requires an exceptionally high level of brand expenditures. Presumably, Deutsche Post DHL failed to overcome this barrier. After a few years, it decided to withdraw its DHL brand from the domestic market in view of the necessary high expenditures for establishing the brand (Wilson and Baer 2008).

A closer examination of Table 4 reveals that paper tissues is the category with the lowest BRiC among the 20 chosen categories. Notably, Procter & Gamble began attacking this and other paper categories in Western Europe by launching value brands, such as Bounty (kitchen towels) and Charmin (toilet tissues), and by acquiring established brands, such as Tempo (paper tissues), in the late 1990s. Along with the rise of private labels (>70% market share in many markets) and an intensified price competition, Procter & Gamble recently decided to exit most of these categories by selling or licensing its brands to the Swedish company Svenska Cellulosa in 2007.

We do not speculate about the particular reasons for and possible mistakes that resulted in these brand failures, but we believe that BRiC is part of the story and helps explain the specific challenges for Deutsche Post DHL and Procter & Gamble. The Deutsche Post DHL example supports our conclusion that high-level BRiC categories demand higher levels of brand expenditures, and this may include the possibility that the resources of a new entrant be overstrained. The Procter & Gamble example highlights the risks of entering into a low-level BRiC market with a value brand strategy.

The proposed scale enables managers to determine brand importance in new categories or consumer segments in advance. They only need to ask a few questions in a random

sample of consumers (see Appendix A), which should keep market research costs low. A manager's own market expertise might not be sufficient. In our introductory management survey, we also asked the managers to estimate how consumers perceive BRiC across the 20 focal product categories in their country. Interrater reliability, as measured by Cronbach's alpha, was relatively low, with an average of .500, but it increased with the number of raters, as we expected. More important, even after we correct for measurement error, the correlation of manager-estimated BRiC scores with the consumer scores in the three countries of the 2008 replication study appears to be rather low at .364 (.268 for rank correlation; both at  $p < .05$  and  $N = 60$ ). Although marketing experts seem to correctly perceive patterns of BRiC differences across categories, the accuracy of their estimates does not appear to be very high. Thus, in addition to managerial expertise, the proposed scale makes an important contribution toward measuring the reality in the markets in an unbiased and reliable way. If a customer survey is not feasible, managers could also use the results of the contingency factor analysis in Table 6 to improve their prediction of BRiC.

##### *Theoretical Value of BRiC*

The proposed BRiC concept is related to the extant branding literature and offers thought-provoking insights for theory building. The concept contributes to our understanding of how brand equity arises and affects customer behavior. It is a reflection of the variety and strengths of constituent brands within a category. It depends on how much firms invested in brand-building activities in the past and how these investments gave rise to individual brand equities of products in the category. New brand entries may well have the power to affect BRiC significantly. Prior research has shown that consumer preferences are, to some extent, ambiguous (e.g., Carpenter and Nakamoto 1989). In particular, new brands with innovative features may shape preferences and thus create desire for the new brand. Insofar as these innovative features become part of a distinct brand image, they contribute to building individual brand equity that is highly relevant to customers and, consequently, increase BRiC. Apple's recent introduction of the iPhone may be good example of these mechanisms. The mobile phone offers new benefits, such as convenient Internet usage, and promises intangible (social) benefits that buyers already know from other successful Apple products (e.g., the iPod, the iBook). However, the entry of new competitors may also contribute to decreasing BRiC. For example, private labels usually emphasize low price as a benefit. As a result, price sensitivity is likely to increase at the expense of BRiC.

The BRiC construct enhances our understanding of other brand constructs. Some brand equity measures (e.g., Aaker 1996) emphasize personal relevance of the brand as an important driver but do not specifically explain from where personal relevance comes. The BRiC construct provides conceptual structure because it disentangles alternative explanations. It provides information on how much of the personal relevance is attributed to the general role of brands in consumer decision making and how much is due to a potential (dis)advantage of the brand in terms of brand knowledge.

The BRiC construct offers new interpretations of how psychosociocultural concepts, such as attachment to possessions, self-brand connections, or brand relationships, gain economic relevance. Because BRiC measures the emphasis consumers put on brands in the purchase process, it provides an important connection between intrapersonal brand theories and observable purchase behavior.

Finally, BRiC may help explain aggregate market outcomes, such as the redistribution of market shares in times of an economic downturn. In a recession, discount brands and value brands are observed to win disproportionately (e.g., GfK 2009; Isakovich 2009). The pressure to reduce household expenditures explains the market share gains of discount brands (Lamey et al. 2007). However, an explanation for the growth of value brands is not readily available. An economic recession goes along with a higher level of uncertainty and volatility in life. Consumers now have a stronger motivation to strive for order and stability in their lives, which influences their buying behavior. Brands provide an important means to reduce uncertainties and volatilities. As a result, the importance of brands increases relative to other decision criteria.

#### *Limitations and Further Research*

This research is subject to limitations that, in turn, may stimulate further research. It would be worthwhile to extend the application to other countries. With more countries, researchers could investigate the importance of cultural (e.g., cultural values) and economic (e.g., income distribution) differences for explaining country differences in BRiC. The evolution of BRiC and its sources presents an intriguing problem. With longitudinal data or appropriate experimental settings, researchers could analyze the extent to which brand expenditures and (new) brand concepts can affect BRiC. Finally, although we believe that risk reduction and social demonstrance are fundamental brand functions, which is supported by the high explanatory power for BRiC in our analyses, there may be other brand functions. Further research might explore the extent to which meanings such as national traditions or heritages add to BRiC and discriminate from other meanings.

#### *APPENDIX A: ITEMS FOR KEY LATENT CONSTRUCTS IN SURVEY*

Respondents evaluated each item using a seven-point Likert scale, with “strongly disagree” (1) and “strongly agree” (7) as anchors. Statements apply to physical goods. Minor adaptations are required for services and retailers.

##### *BRiC: Brand Relevance in Category*

1. When I purchase a product in the given category, the brand plays—compared to other things—an important role.
2. When purchasing, I focus mainly on the brand.
3. To me, it is important to purchase a brand name product.
4. The brand plays a significant role as to how satisfied I am with the product.

##### *Risk Reduction Function*

1. I purchase mainly brand name products because that reduces the risk of aggravation later.

2. I purchase brand name products because I know that I get good quality.
3. I choose brand name products to avoid disappointments.
4. I purchase brand name products because I know that the performance promised is worth its money.

##### *Social Demonstrance Function*

1. To me, the brand is indeed important because I believe that other people judge me on the basis of it.
2. I purchase particular brands because I know that other people notice them.
3. I purchase particular brands because I have much in common with other buyers of that brand.
4. I pay attention to the brand because its buyers are just like me.

#### *APPENDIX B: MEASUREMENT*

In Appendix B, we present details on the measures used in the tests for convergent, nomological, and discriminant validity, as well as in our contingency factor analysis. Statements apply to physical goods. Minor adaptations are required for services and retailers. (The asterisk indicates that participants evaluated each item using a seven-point Likert scale, with “strongly disagree” [1] and “strongly agree” [7] as anchors.)

##### *Measures for Convergent and Nomological Validity Tests in Table 2*

1. Constant-Sum Brand Importance Weight (adapted from Fischer 2007)

We will now ask you some questions about the criteria which might be important to you when purchasing [CATEGORY XY]. How relevant is each of these criteria to you when you have to make a decision about buying or not buying in [CATEGORY XY]? To this end, you have 100 points. The more important a criterion is to you, the more points you should give it. You can also rate a criterion with 0 points if it is of no importance to you at all when purchasing a product. Please divide exactly 100 points.

- Price and possible maintenance costs
  - Quality
  - Effort required for the purchase (it is easy to get/purchase the product)
  - Advertising information about the provider and the product (ads on television, radio, in newspapers, brochures, stores, etc.)
  - Brand
2. Price Premium\*
    - I prefer to purchase a brand name product, even if that means paying an additional price.
  3. Brand Loyalty\* (Ailawadi, Neslin, and Gedenk 2001;  $\alpha = .872$ )
    - I prefer a particular brand.
    - I am willing to invest additional time and/or effort, just to be able to buy my favorite brand.
    - When purchasing, it is usually important to me which brand I purchase.
  4. Conjoint Brand Importance Weight

From published conjoint studies, we obtain the conjoint brand importance by the maximum difference between estimated partworth utilities for the brand attribute divided by the sum of maximum differences across all attributes. A literature search within the 1990–2006 period produced 112 potentially relevant studies that include brand as an attribute. Among these studies, 95 (85%) examined consumer categories in various countries. From these studies, we could use 56 importance weights.

#### 5. Advertising Expenditures (Category Level)

We exploit advertising data of 397 companies for the period 2004–2006 that are provided by the COMPUSTAT database. We classify these companies into 51 category/industry groups and aggregate annual advertising expenditures (mean of 2004–2006) across companies for each group. Total annual expenditures across all groups are \$126 billion.

#### 6. Brand Equity (Category Level)

Interbrand's Top 100 Brands lists (available at [http://www.interbrand.com/best\\_global\\_brands\\_intro.aspx?langid=1003](http://www.interbrand.com/best_global_brands_intro.aspx?langid=1003)) for 2004–2006 provide brand equity data on 109 brands, which we assign to the 51 groups used for aggregating advertising expenditures. There are more than 100 brands because the composition of the list changed a bit over the three years. On average, total brand equities across all groups are \$1,114 billion per year.

#### Measures for Discriminant Validity Tests in Table 3

##### 1. Brand Uniqueness\* (adapted from Keller 1993; $\alpha = .806$ )

- In the category in question, I associate many brands with unique ideas.
- In the category in question, many brands differ with respect to the notions I have about them.

##### 2. Brand Clarity\* (adapted from Keller 1993; $\alpha = .895$ )

- I have a very clear picture in my mind of many different brands in the category in question.
- I have a clear idea of most brands of this category in my mind.
- I could describe most of the brands in this category spontaneously.

##### 3. Brand Likability (Mitchell 1986; $\alpha = .879$ )

- Most brands in this category ... (1 = "I don't really like," and 7 = "I like very much").
- My feelings about most of the brands in the category in question are very ... (1 = "unpleasant," and 7 = "pleasant").
- My feelings about most of the brands in the category in question are very ... (1 = "bad," and 7 = "good").

##### 4. Brand Awareness\*

- I know many brands in the category in question.

##### 5. Consideration Set Size

- Thinking about all [CATEGORY XY] brands available and familiar to you, how many of these brands would you consider? Approx. \_\_\_\_ brands

##### 6. The ACSI (Category Level)

We obtain satisfaction data at the category level from data reported by the ACSI ([www.theacsi.org](http://www.theacsi.org)) and match them with our categories.

#### Measures of Product-Market Characteristics from Expert Survey ( $N = 30$ ) in Table 6

The asterisk indicates that experts evaluated each item using a five-point Likert scale with "strongly disagree" (1) and "strongly agree" (5) as anchors. Statistics in parentheses show the mean and standard deviation of expert ratings as averages across the 20 categories.

##### 1. Visibility of Consumption\* ( $M = 3.13$ , $SD = 1.40$ )

- The consumption of products in [CATEGORY XY] is visible to the public, i.e., other people notice the brand in use.

##### 2. Degree of Homogeneity in Functional Benefits\* ( $M = 2.98$ , $SD = 1.14$ )

- Competitors in [CATEGORY XY] virtually offer the same quality level.

##### 3. Frequency of New Product Introductions\* ( $M = 3.02$ , $SD = 1.24$ )

- In [CATEGORY XY], new products are frequently launched.

##### 4. Number of Brands Available ( $M = 3.21$ , $SD = .85$ )

Among how many different brands can a consumer typically choose in [CATEGORY XY]?

- Only one brand
- 2–3 brands
- 4–10 brands
- 11–30 brands
- More than 30 brands

##### 5. Ability to Judge Product Quality *Ex Ante*\* ( $M = 3.07$ , $SD = 1.11$ )

- Consumers feel competent to objectively assess the relevant quality criteria prior to first buying a product in [CATEGORY XY].

##### 6. Decision Involvement ( $M = 2.69$ , $SD = 1.35$ )

Please imagine a situation in which consumers usually buy products in [CATEGORY XY].

- 1 = The consumer virtually makes an automated choice.
- 2 = The consumer chooses from a small number of brands s/he is familiar with.
- 3 = The consumer searches for other alternatives in addition to the brands s/he is familiar with and which are offered to him/her.
- 4 = The consumer invests a lot of time to evaluate and compare all alternatives that s/he has found.
- 5 = The consumer invests a lot of time to evaluate and compare alternatives. A decision is only made when the consumer feels that s/he has collected and processed all information that are required for the decision.

##### 7. Extent of Group Decision Making ( $M = 2.04$ , $SD = 1.24$ )

The typical decision process in [CATEGORY XY] can be characterized as follows:

- 1 = Alone
- 5 = Together with other people

##### 8. Confidence in Own Evaluation\* (used for weighting of responses; see Van Bruggen, Liliën, and Kacker 2002)

- I felt competent in answering the survey questions.

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